TECHNOLOGY TEST SUMMARY

Gas Phase Chemical Reduction

1. **Technology Description:** Eco Logic's GPCR™ Process uses high temperatures and hydrogen to reduce organic compounds to methane and other low molecular weight hydrocarbons at temperatures of approximately 850°C and ambient pressure. Wastes are first processed in a Thermal Reduction Batch Processor (TRBP) before entering the GPCR reactor. The TRBP volatilizes the bulk of the material so that it can be destroyed in the GPCR reactor. The TRBP operates in batch mode, while the GPCR reactor is a continuous operation. The acids produced are neutralized in a caustic scrubber and form salts. Product gas from the scrubber is combusted in a Product Gas Burner.

2. **Testing Organization:** Stone & Webster Subcontract with Eco Logic.

3. **Overall Test Objective:** The principal objective of the Limited Engineering Design Study testing of the Gas Phase Chemical Reduction (GPCR) process was to determine the treatment of NSCMP feeds and provide preliminary engineering data. This included an assessment of processing rates to support scale-up and the characterization of liquid, solid and gaseous effluents.

4. **Feed Materials:**
   a. GB Rinsate
   b. MMD H Neutralent
   c. DF Simulant
   d. Non-agent CAIS vials (chloroform)
   e. RRS RED Neutralent

5. **Schedule:**

Test Plan:	March 24, 2001
Test:	April 30 – June 1, 2001
Test Report:	July 13, 2001
Draft Evaluation Report:	July 31, 2001
Final Evaluation Report:	September 4, 2001

6. **Test Description:** The GPCR™ Demonstration Unit (DU) is a pilot-scale unit. It was installed and tested in building E3726 at the Aberdeen Proving Ground, Edgewood Area. The DU is a portable demonstration unit with a 6-inch diameter reactor. This unit was used for ACWA testing in 2000. Tests were conducted to establish the processing rates and to verify destruction of NSCMP neutralent simulants. As part of the tests gas, liquid and solid effluent streams were sampled and analyzed.